WINZLER & KELLY
CONSULTING ENGINEERS

Ref: 00-1428-03.11500

July 5, 2006

Mr. Mark Verhey
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, California 95501

Re: Second Quarterly Monitoring Report for June 2006 at Blue Lake Forest Products, 1589 Glendale Drive, Arcata, CA LOP# 12196

Dear Mr. Verhey:

On behalf of Blue Lake Forest Products, Winzler & Kelly Consulting Engineers (Winzler & Kelly) is submitting the following quarterly monitoring data collected in June 2006 for the above-referenced site. The purpose of this letter report is to document the activities, results, and findings of the quarterly monitoring program. All figures referred to herein are included in Appendix A, all tables are included in Appendix B, laboratory analytical reports are contained in Appendix C, Standard Operating Procedures (SOP) are contained in Appendix D, and Field Notes and the Waste Manifest are contained in Appendix E.

Quarterly Monitoring Activities

On June 8, 2006, a Winzler and Kelly field technician developed the new monitoring wells MW-15 and MW-16, which were installed on May 17, 2006, in accordance with Winzler and Kelly's SOP for "*Monitoring Well Installation and Development*" found in Appendix D. Details of installation, sampling, and well construction were reported in the June 2006, *Report of Findings for Continued Subsurface Investigation*. Following development, water levels were obtained from all site monitoring wells, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16, in order to calculate groundwater gradient. The site monitoring wells were then purged and sampled according to Winzler & Kelly's SOP for "*Monitoring Well Purging and Sampling Activities*". During purging, pH, temperature, dissolved oxygen and specific conductivity readings were also measured. A regional map, site vicinity map, and site map with groundwater gradient and well locations are shown on Figures 1, 2, and 3 respectively (Appendix A).

Hydrographic Data

Depth to water measurements were collected after removing all well caps and allowing the wells to equalize for at least 15 minutes in accordance with Winzler & Kelly's SOP for "*Groundwater Level Measurements and Free Phase Hydrocarbon Measurements*" (Appendix D). Depth to water was

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measured for each well from the top of the well casing. Depth to water measurements and water groundwater elevations are included in Table 1, Appendix B.

The calculated groundwater gradient using the measurements from the six site monitoring wells during the June 2006 sampling event was to the south-southeast. The calculated gradient was 163.54° Azimuth with a magnitude of 0.74 feet per 100 feet. Previous groundwater gradients were calculated using measurements from MW-11, MW-12, MW-13, and MW-14. Table 2, Appendix B shows the historical groundwater gradient summary for the site, and Figure 3, Appendix A shows the groundwater gradient calculated for the June 2006 sampling event.

Depth to water data for the June 2006 sampling event was submitted electronically to the State Water Resources Control Board Geotracker System on July 5, 2006.

Dissolved Oxygen Measurements

Dissolved oxygen (DO) concentrations were measured in the field in wells MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 using an electronic dissolved oxygen probe. The DO measurements were recorded prior to well purging and sampling activities. The DO measurements are summarized on Table 3 (Appendix B). DO measurements from the June 2006 monitoring event were fairly consistent with previous events, with moderate DO levels in wells MW-11 (4.2 mg/L) and MW-13 (4.3 mg/L), low levels in MW-12 (2.2 mg/L), and suppressed levels in MW-14 (0.2 mg/L), MW-15 (0.2 mg/L) and MW-16 (1.0 mg/L). As detailed below, MW-15 was the only well with detectable levels of hydrocarbons reported during this monitoring event.

Water Sampling

On June 9, 2006, all six site monitoring wells were purged in accordance with Winzler & Kelly's SOP for "*Monitoring Well Purging and Sampling Activities*" (Appendix D). As standard procedure, measurements of temperature, conductivity, and pH of purge water from each well are made to verify that equilibrium has been attained prior to sampling. After purging at least three wetted casing volumes of water from each monitoring well, the water level was allowed to recover to approximately 80% of its pre-purge level before sampling.

During purging and sampling, petroleum odor or sheen was not detected in any of the site monitoring wells (Field Notes, Appendix E)

As part of the quarterly groundwater monitoring program, groundwater samples collected from site monitoring wells MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 were analyzed for the following:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) and Benzene, Toluene, Ethylbenzene, and Xylenes, including m,p-Xylene and o-Xylene (BTEX) by EPA Method 5030/8021B.
- Total Petroleum Hydrocarbons as Diesel (TPH-D) and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO) by EPA Method 3510/GCFID/8015B with silica gel cleanup.

Groundwater Analytical Results

The results of the water sample analyses are summarized in Table 4 in Appendix B. The laboratory reports and chain of custody documentation are included in Appendix C.

The groundwater sample collected from the newly installed monitoring well MW-15 on June 9, 2006, contained TPH-D and TPH-G at concentrations of 520 parts per billion (ppb) and 490 ppb, respectively. All other tested constituents for MW-15 were below method detection limits.

The samples collected from the remaining site monitoring wells, MW-11, MW-12, MW-13, MW-14, and MW-16 were below the method detection limits for all analytes tested.

Laboratory analytical results for the groundwater samples collected on June 9, 2006, from MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 were submitted electronically to the State Water Resources Control Board Geotracker System on July 5, 2006.

Disposition of Soil and Wastewater

On June 23, 2006, Chico Drain Oil Service removed 300 gallons of water generated during groundwater sampling of MW-12, MW-13, and MW-15, development water from MW-15, and rinsate from well installation activities. The Waste Manifest is included in Appendix E. The drums containing purge water from the sampling of wells MW-11, MW-14, and MW-16 were spray irrigated at the site in a manner that avoided runoff or ponding.

Quality Assurance/Quality Control (QA/QC)

A trip blank was submitted with the groundwater samples but was not analyzed because there were samples that were non-detect for all tested analytes. Laboratory QA/QC was provided by the use of lab Method Blanks to preclude false positive analysis of analytes and the use of Laboratory Control Spike samples (LCS) to evaluate the percentage recovery of target analytes during analysis. The method blank reported results for MTBE, Toluene, m,p-Xylene, TPH-D, and TPH-MO at levels below quantitation limits. The LCS recoveries were within acceptable limits for all tested analytes. The RPD for the LCSD was above the acceptance limits for diesel.

The lab also noted:

- TPH as Diesel/Motor Oil w/ Silica Gel Cleanup:
  All samples submitted for a silica gel cleanup were initially analyzed for diesel/motor oil. The samples showing no detectable levels of the analytes were not subjected to the cleanup procedure.

  The relative percent difference (RPD) for the laboratory control samples was above the acceptable limits for diesel. This indicates that the results could be variable.

  Sample MW-15 contains material similar to degraded or weathered diesel oil.

  Motor oil is being reported as not detect with a dilution for MW-15 due to matrix interference.

- TPH as Gasoline:
  Sample MW-15 does not represent a peak pattern consistent with that of gasoline. The reported results represent the amount of material in the gasoline range.

- BTEX:
  The surrogate recovery for sample MW-13 was below the lower acceptance limit. The response of the reporting limit standard was such that the target analytes would have been detected even with the low recovery; therefore, the data were accepted.

  Some reporting limits were raised for MW-15 due to matrix interference.

Conclusions & Recommendations

- The groundwater gradient on June 8, 2006, calculated at 0.74 feet per 100 feet and flowed at 163.54° Azimuth.
- Monitoring well MW-15, installed near the boundary of the extent of soil excavation from previous remediation activities was the only monitoring well with analytes above laboratory detection limits for the June 2006 sampling event. The groundwater sample from MW-15 contained TPH-D and TPH-G at concentrations of 520 ppb and 490 ppb, respectively.
- Groundwater samples from monitoring well MW-16, installed in the down gradient direction of the known source area, reported below detection limits for all analytes

tested, indicating that groundwater contamination has not migrated to the southern side of the building

- Groundwater contaminant levels show a declining trend from the initial December 2004 sampling event. All analytes tested for in groundwater samples from MW-11, MW-12, MW-13, and MW-14 were below laboratory detection limits for the June 2006 sampling event.
- Additional quarterly monitoring data is required from MW-15 and MW-16 to establish groundwater trends in these wells.
- The next quarterly monitoring event is scheduled for September 2006.

If you have any questions or comments, please do not hesitate to call.

Sincerely,
WINZLER & KELLY

Prepared by:

Colleen Ellis
Staff Geologist

Reviewed by:

REGISTERED PROFESSIONAL ENGINEER
PATRICK KASPARI
No. C055722
Exp. 12/31/06
CIVIL
STATE OF CALIFORNIA

Patrick Kaspari, P.E. #C055722
Project Engineer

Enclosures:

Appendix A:		Figures
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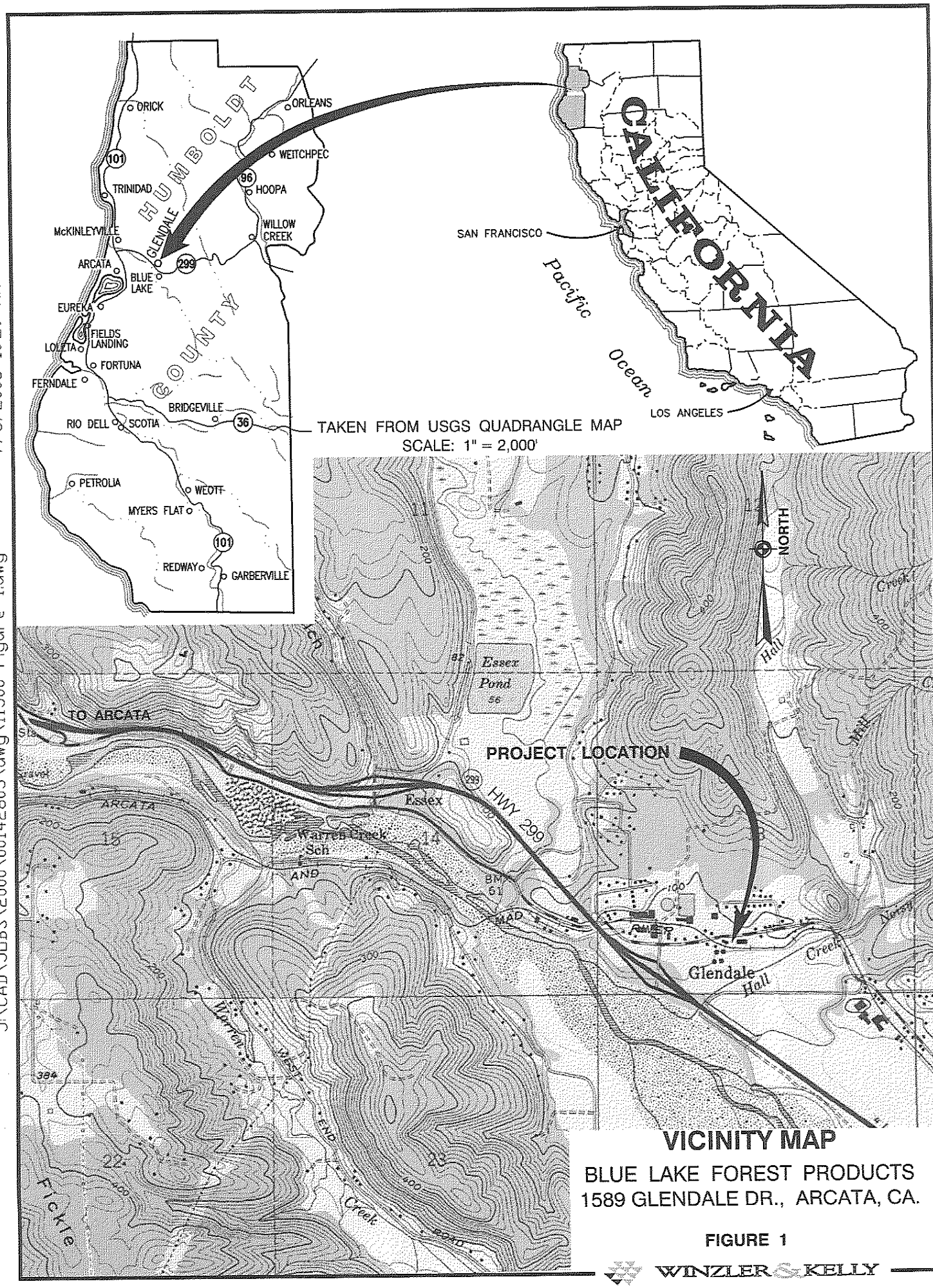
Appendix D:		Standard Operating Procedures
Appendix E:		Field Notes and Waste Manifest

c: Dan Aalfs, P.O. Box 2159, McKinleyville, CA 95519
Gary Johnston, 1325 G Street, Eureka, CA 95501

Appendix A
Figures



VICINITY MAP

BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.

FIGURE 1

WINZLER & KELLY

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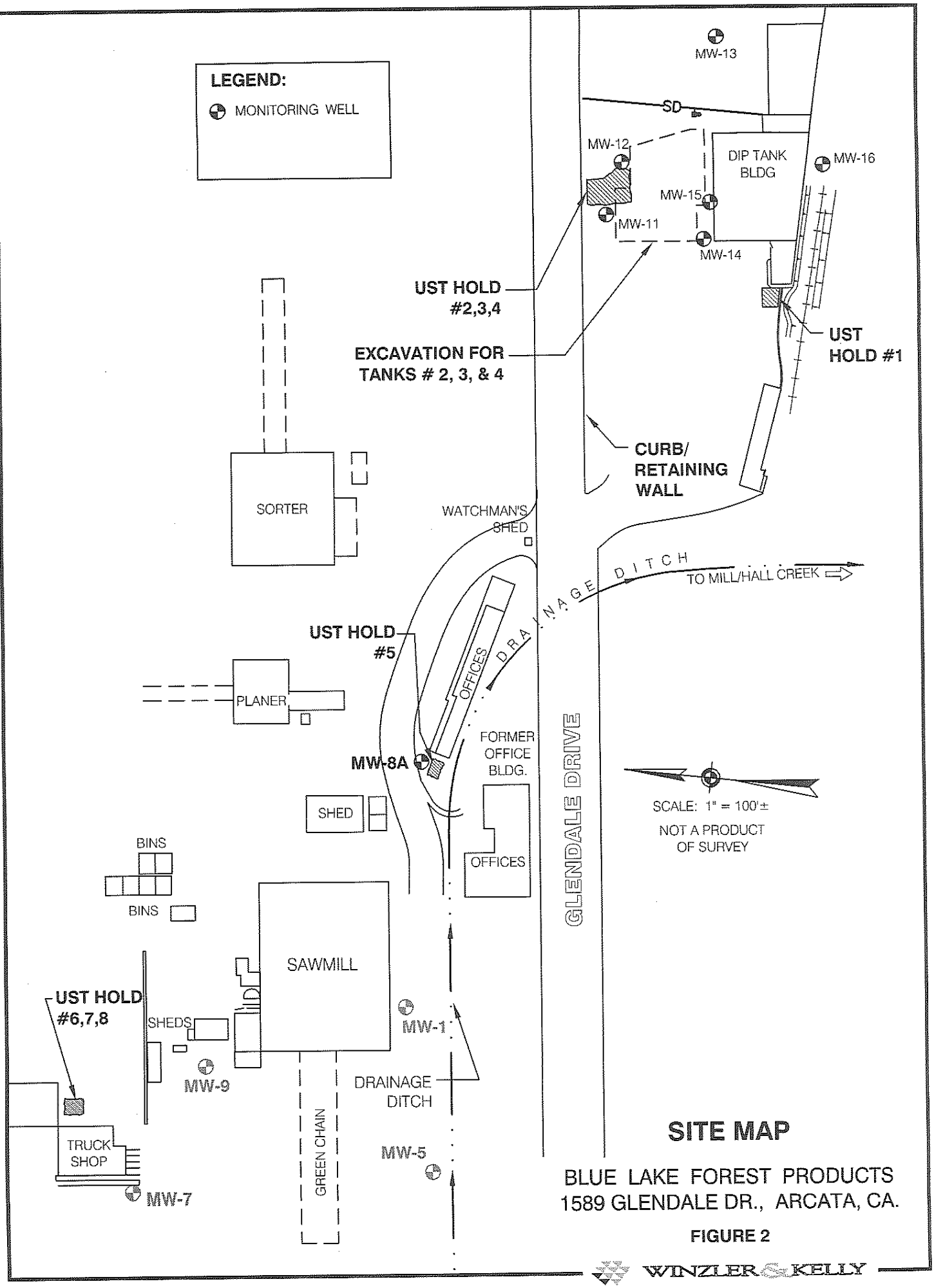


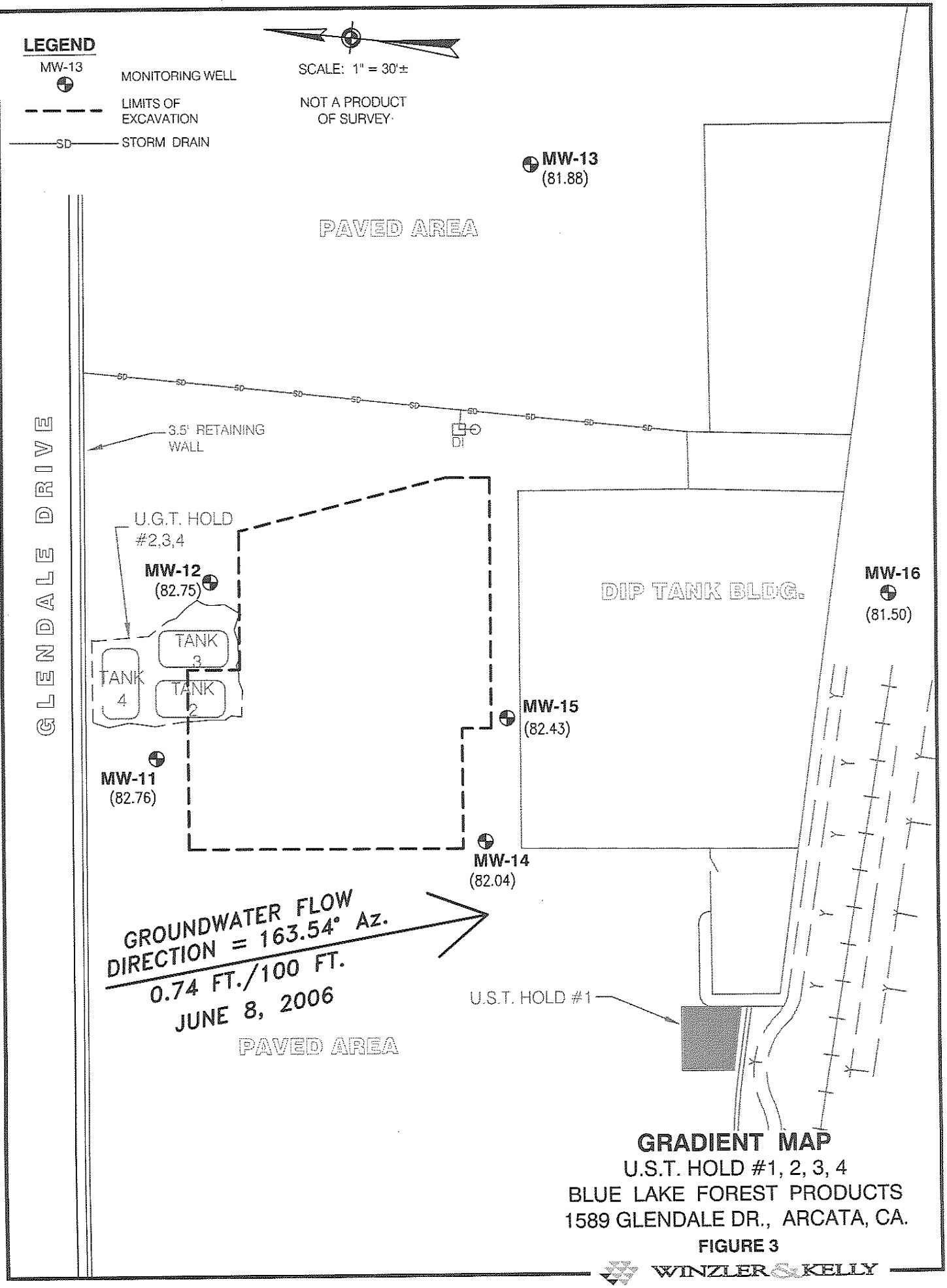
J:\CAD\JOBS\2000\00142803\dwg\11500 Figure 2.dwg 7/5/2006 12:08 PM

SITE MAP

BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.

FIGURE 2

WINZLER & KELLY



J:\CAD\JOBS\2000\00142803\dwg\11500 Figure 3.dwg 7/5/2006 11:19 AM

GRADIENT MAP

U.S.T. HOLD #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.

FIGURE 3

WINZLER & KELLY

Appendix B
Tables

TABLE 1
HISTORIC GROUNDWATER MEASURMENTS

BLUE LAKE FOREST PRODUCTS
1589 Glendale Drive Arcata, CA
LOP# 12196

Monitoring Well ID	MW-11		MW-12		MW-13		MW-14		MW-15		MW-16	
Well Location	northing	easting	northing	easting	northing	easting	northing	easting	northing	easting	northing	easting
	40.89993	-124.01589	40.89991	-124.01738	40.89973	-124.01534	40.89970	-124.01593	40.89970	-124.01582	40.89946	-124.01567
Top of Casing (ft MSL)	91.47		91.52		91.19		91.71		91.94		88.40	
	DTW	GW ELEV	DTW	GW ELEV	DTW	GW ELEV	DTW	GW ELEV	DTW	GW ELEV	DTW	GW ELEV
DATE	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)	(ft bgs)	(ft MSL)
2-Dec-04	10.28	81.19	10.49	81.03	11.00	80.19	11.59	80.12				
26-Mar-05	6.63	84.84	6.64	84.88	6.92	84.27	8.38	83.33				
15-Jun-05	7.90	83.57	8.00	83.52	8.42	82.77	8.98	82.73				
19-Sep-05	10.70	80.77	10.82	80.70	11.54	79.65	12.05	79.66				
21-Dec-05	5.00	86.47	5.00	86.52	5.08	86.11	6.71	85.00				
14-Mar-06	3.77	37.13	3.73	37.17	4.24	36.66	5.77	35.13				
8-Jun-06	8.71	82.76	8.77	82.75	9.31	81.88	9.67	82.04	9.51	82.43	6.90	81.50

TABLE 2
GROUNDWATER GRADIENT
BLUE LAKE FOREST PRODUCTS

Date of Data Collection	*Groundwater Flow Direction*	*Degrees Azimuth*	*Slope in Feet Per 100 Feet*
2-Dec-04	**South**	179.88	1.29
26-Mar-05	**South-Southwest**	196.35	1.85
15-Jun-05	**South**	179.90	1.07
19-Sep-05	**South**	178.41	1.43
21-Dec-05	**South-Southwest**	200.30	1.79
14-Mar-06	**South-Southwest**	194.84	2.19
8-Jun-06	**South-Southeast**	163.54	0.74

Note:
Gradient from December 2004 through March 2006 is calculated using data from wells MW-11 through MW-14.

TABLE 3
DISSOLVED OXYGEN CONCENTRATIONS
BLUE LAKE FOREST PRODUCTS
1589 Glendale Drive Arcata, CA
LOP# 12196

	MW-11	*MW-12*	*MW-13*	*MW-14*	*MW-15*	*MW-16*
19-Sep-05	2.5	2.9	1.7	3.9		
21-Dec-05	2.9	3.6	4.7	1.6		
14-Mar-06	4.7	5.2	5.4	1.2		
8-Jun-06	4.2	2.2	4.3	0.2	0.2	1.0
DO concentrations in milligrams/liter						

TABLE 4
GROUNDWATER ANALYTICAL RESULTS
BLUE LAKE FOREST PRODUCTS
1589 Glendale Drive Arcata, CA
LOP# 12196

Sample	Date	TPH-Diesel (ppb)	TPH-MO (ppb)	TPH-Gas (ppb)	MTBE Methyl tert-butyl ether (ppb)	TBA Tert-butyl alcohol	DIPE Di-isopropyl ether	ETBE Ethyl tert-butyl ether	TAME Tert-amyl methyl ether	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	m,p Xylene (ppb)	"o" Xylene (ppb)	Lead (ppb)
MW-11	12/2/04	< 50 [2]	NT	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5
	3/26/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/15/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	9/19/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	12/21/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	3/14/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/9/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
MW-12	12/3/04	**5700** [1, 2]	NT	**280** [3]	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5
	3/26/05	**190** [1]	< 170	**72** [3]	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/16/05	**590** [1]	< 170	**56** [3]	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	9/19/05	**790** [1]	< 170	**89** [3]	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	12/21/05	**57** [1,2]	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	3/14/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	**1.1**	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/9/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
MW-13	12/3/04	**580** [1, 2]	NT	**220** [3]	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5
	3/26/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/16/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	9/19/05	**100** [1]	< 170	**73** [3]	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	12/21/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	3/14/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/9/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
MW-14	12/3/04	< 50 [2]	NT	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5
	3/26/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/15/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	9/19/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	12/21/05	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	3/14/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
	6/9/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
MW-15	6/9/06	**520** [1, 6]	< 340 [5]	**490** [4]	< 3.0	NT	NT	NT	NT	< 0.50	< 5.0 [7]	< 2.5 [7]	< 3.0 [7]	< 2.0 [7]	NT
MW-16	6/9/06	< 50	< 170	< 50	< 3.0	NT	NT	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT

Notes:

1 Sample contains material similar to degraded or weathered diesel oil.

2 The laboratory control sample (LCS) and the laboratory control sample duplicate (LCSD) recoveries were above the upper acceptance limit for diesel. These recoveries indicate that the sample results may be erroneously high. There were no detectable levels of the analyte in the samples; therefore, the data were accepted.

3 Samples do not present a peak pattern consistent with that of gasoline. The peaks elute toward the end of the gasoline range. The material appears to be a product heavier than gasoline. The reported results represent the amount of material in the gasoline range.

4 Samples do not present a peak pattern consistent with that of gasoline. The reported results represent the amount of material in the gasoline range.

5 Motor oil is being reported as not detect (ND) with a dilution of the sample due to matrix.

6 The relative percent difference for the laboratory control samples was above the acceptance limit for diesel. This indicates that the results could be variable.

7 Some reporting limits were raised due to matrix interference.

Appendix C
Laboratory Analytical Reports

NORTH COAST
LABORATORIES LTD.

June 28, 2006

Winzler and Kelly
633 Third Street
Eureka, CA 95501

Attn: Colleen Ellis

RE: BLFP 00142803.11500

Order No.: 0606359
Invoice No.: 59221
PO No.:
ELAP No. 1247-Expires July 2006

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-15
01D	MW-15
02A	MW-14
02D	MW-14
03A	MW-11
03D	MW-11
04A	MW-16
04D	MW-16
05A	MW-13
05D	MW-13
06A	MW-12
06D	MW-12

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Colleen Blackstone — Laboratory Supervisor(s)

(FOR TLS) — QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

CLIENT: Winzler and Kelly
Project: BLFP 00142803.11500
Lab Order: 0606359

CASE NARRATIVE

BTEX:
The surrogate recovery for sample MW-13 was below the lower acceptance limit. The response of the reporting limit standard was such that the target analytes would have been detected even with the low recovery; therefore, the data were accepted.

Some reporting limits were raised for sample MW-15 due to matrix interference.

TPH as Gasoline:
Sample MW-15 does not present a peak pattern consistent with that of gasoline. The reported result represents the amount of material in the gasoline range.

TPH as Diesel/Motor Oil w/ Silica Gel Cleanup:
All samples submitted for a silica gel cleanup were initially analyzed for diesel/motor oil. The samples showing no detectable levels of the analytes were not subjected to the cleanup procedure.

Sample MW-15 contains material similar to degraded or weathered diesel oil.

Motor oil is being reported as not detected (ND) with a dilution for sample MW-15 due to matrix.

The relative percent difference (RPD) for the laboratory control samples was above the acceptance limit for diesel. This indicates that the results could be variable.

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 28-Jun-2006

WorkOrder: 0606359

ANALYTICAL REPORT

Client Sample ID: MW-15 **Received:** 6/12/06 **Collected:** 6/9/06 10:30

Lab ID: 0606359-01A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		6/22/06
Benzene	ND	0.50	µg/L	1.0		6/22/06
Toluene	ND	5.0	µg/L	1.0		6/22/06
Ethylbenzene	ND	2.5	µg/L	1.0		6/22/06
m,p-Xylene	ND	3.0	µg/L	1.0		6/22/06
o-Xylene	ND	2.0	µg/L	1.0		6/22/06
Surrogate: Cis-1,2-Dichloroethylene	85.4	85-115	% Rec	1.0		6/22/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	490	50	µg/L	1.0		6/22/06

Client Sample ID: MW-15 **Received:** 6/12/06 **Collected:** 6/9/06 10:30

Lab ID: 0606359-01D

Test Name: TPH as Diesel/Motor Oil w/ Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	520	100	µg/L	2.0	6/19/06	6/27/06
TPHC Motor Oil	ND	340	µg/L	2.0	6/19/06	6/27/06

Client Sample ID: MW-14 **Received:** 6/12/06 **Collected:** 6/9/06 11:11

Lab ID: 0606359-02A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		6/22/06
Benzene	ND	0.50	µg/L	1.0		6/22/06
Toluene	ND	0.50	µg/L	1.0		6/22/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/22/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/22/06
o-Xylene	ND	0.50	µg/L	1.0		6/22/06
Surrogate: Cis-1,2-Dichloroethylene	91.2	85-115	% Rec	1.0		6/22/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/22/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 28-Jun-2006

WorkOrder: 0606359

ANALYTICAL REPORT

Client Sample ID: MW-14 **Received:** 6/12/06 **Collected:** 6/9/06 11:11

Lab ID: 0606359-02D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	6/15/06	6/15/06
TPHC Motor Oil	ND	170	µg/L	1.0	6/15/06	6/15/06

Client Sample ID: MW-11 **Received:** 6/12/06 **Collected:** 6/9/06 12:37

Lab ID: 0606359-03A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		6/22/06
Benzene	ND	0.50	µg/L	1.0		6/22/06
Toluene	ND	0.50	µg/L	1.0		6/22/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/22/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/22/06
o-Xylene	ND	0.50	µg/L	1.0		6/22/06
Surrogate: Cis-1,2-Dichloroethylene	88.6	85-115	% Rec	1.0		6/22/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/22/06

Client Sample ID: MW-11 **Received:** 6/12/06 **Collected:** 6/9/06 12:37

Lab ID: 0606359-03D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	6/15/06	6/15/06
TPHC Motor Oil	ND	170	µg/L	1.0	6/15/06	6/15/06

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Date: 28-Jun-2006

WorkOrder: 0606359

ANALYTICAL REPORT

Client Sample ID: MW-16 **Received:** 6/12/06 **Collected:** 6/9/06 13:45

Lab ID: 0606359-04A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		6/22/06
Benzene	ND	0.50	µg/L	1.0		6/22/06
Toluene	ND	0.50	µg/L	1.0		6/22/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/22/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/22/06
o-Xylene	ND	0.50	µg/L	1.0		6/22/06
Surrogate: Cis-1,2-Dichloroethylene	93.6	85-115	% Rec	1.0		6/22/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/22/06

Client Sample ID: MW-16 **Received:** 6/12/06 **Collected:** 6/9/06 13:45

Lab ID: 0606359-04D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	6/15/06	6/15/06
TPHC Motor Oil	ND	170	µg/L	1.0	6/15/06	6/15/06

Client Sample ID: MW-13 **Received:** 6/12/06 **Collected:** 6/9/06 14:22

Lab ID: 0606359-05A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		6/22/06
Benzene	ND	0.50	µg/L	1.0		6/22/06
Toluene	ND	0.50	µg/L	1.0		6/22/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/22/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/22/06
o-Xylene	ND	0.50	µg/L	1.0		6/22/06
Surrogate: Cis-1,2-Dichloroethylene	80.6	85-115	% Rec	1.0		6/22/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/22/06

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Date: 28-Jun-2006
WorkOrder: 0606359

ANALYTICAL REPORT

Client Sample ID: MW-13 **Received:** 6/12/06 **Collected:** 6/9/06 14:22
Lab ID: 0606359-05D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	6/15/06	6/15/06
TPHC Motor Oil	ND	170	µg/L	1.0	6/15/06	6/15/06

Client Sample ID: MW-12 **Received:** 6/12/06 **Collected:** 6/9/06 15:45
Lab ID: 0606359-06A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		6/22/06
Benzene	ND	0.50	µg/L	1.0		6/22/06
Toluene	ND	0.50	µg/L	1.0		6/22/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/22/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/22/06
o-Xylene	ND	0.50	µg/L	1.0		6/22/06
Surrogate: Cis-1,2-Dichloroethylene	91.4	85-115	% Rec	1.0		6/22/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/22/06

Client Sample ID: MW-12 **Received:** 6/12/06 **Collected:** 6/9/06 15:45
Lab ID: 0606359-06D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	6/15/06	6/15/06
TPHC Motor Oil	ND	170	µg/L	1.0	6/15/06	6/15/06

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North Coast Laboratories, Ltd.

Date: 28-Jun-2006

CLIENT: Winzler and Kelly
Work Order: 0606359
Project: BLFP 00142803.11500

QC SUMMARY REPORT
Method Blank

Sample ID **MB-6/21/06** Batch ID: **R41924** Test Code: **BTXEW** Units: **µg/L** Analysis Date **6/21/06 10:35:57 PM** Prep Date
Client ID: Run ID: **ORGC8_060621B** SeqNo: **602045**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	1.000	3.0									J
Benzene	ND	0.50									
Toluene	0.1925	0.50									J
Ethylbenzene	ND	0.50									
m,p-Xylene	0.2172	0.50									J
o-Xylene	ND	0.50									
Cis-1,2-Dichloroethylene	0.925	0.10	1.00	0	92.5%	85	115	0			

Sample ID **MB-15940** Batch ID: **15940** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **6/27/06 3:55:34 AM** Prep Date **6/19/06**
Client ID: Run ID: **ORGC5_060627A** SeqNo: **602664**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	26.04	50									J
TPHC Motor Oil	34.18	170									J

Sample ID **MB-6/21/06** Batch ID: **R41923** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **6/21/06 10:35:57 PM** Prep Date
Client ID: Run ID: **ORGC8_060621A** SeqNo: **602031**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	ND	50									

Sample ID **MB-15921** Batch ID: **15921** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **6/15/06 6:04:31 PM** Prep Date **6/15/06**
Client ID: Run ID: **ORGC7_060615B** SeqNo: **600453**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
TPHC Motor Oil	ND	170									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 28-Jun-2006

CLIENT: Winzler and Kelly
Work Order: 0606359
Project: BLFP 00142803.11500

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-06368** Batch ID: **R41924** Test Code: **BTXEW** Units: **µg/L** Analysis Date **6/21/06 6:25:12 PM** Prep Date

Client ID: Run ID: **ORGC8_060621B** SeqNo: **602042**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	43.54	3.0	40.0	0	109%	85	115	0			
Benzene	4.912	0.50	5.00	0	98.2%	85	115	0			
Toluene	5.020	0.50	5.00	0	100%	85	115	0			
Ethylbenzene	4.896	0.50	5.00	0	97.9%	85	115	0			
m,p-Xylene	9.939	0.50	10.0	0	99.4%	85	115	0			
o-Xylene	4.907	0.50	5.00	0	98.1%	85	115	0			
Cis-1,2-Dichloroethylene	1.10	0.10	1.00	0	110%	85	115	0			

Sample ID **LCSD-06368** Batch ID: **R41924** Test Code: **BTXEW** Units: **µg/L** Analysis Date **6/21/06 7:01:30 PM** Prep Date

Client ID: Run ID: **ORGC8_060621B** SeqNo: **602043**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	42.94	3.0	40.0	0	107%	85	115	43.5	1.39%	15	
Benzene	4.838	0.50	5.00	0	96.8%	85	115	4.91	1.53%	15	
Toluene	4.935	0.50	5.00	0	98.7%	85	115	5.02	1.69%	15	
Ethylbenzene	4.805	0.50	5.00	0	96.1%	85	115	4.90	1.86%	15	
m,p-Xylene	9.756	0.50	10.0	0	97.6%	85	115	9.94	1.86%	15	
o-Xylene	4.804	0.50	5.00	0	96.1%	85	115	4.91	2.12%	15	
Cis-1,2-Dichloroethylene	1.01	0.10	1.00	0	101%	85	115	1.10	8.69%	15	

Sample ID **LCS-15940** Batch ID: **15940** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **6/27/06 2:00:50 AM** Prep Date **6/19/06**

Client ID: Run ID: **ORGC5_060627A** SeqNo: **602662**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	432.5	50	500	0	86.5%	46	91	0			
TPHC Motor Oil	931.5	170	1,000	0	93.1%	48	113	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Winzler and Kelly
Work Order: 0606359
Project: BLFP 00142803.11500

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **LCSD-15940** Batch ID: **15940** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **6/27/06 2:23:42 AM** Prep Date **6/19/06**
Client ID: Run ID: **ORGC5_060627A** SeqNo: **602663**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	355.8	50	500	0	71.2%	46	91	432	19.5%	15	R
TPHC Motor Oil	802.0	170	1,000	0	80.2%	48	113	932	14.9%	15	

Sample ID **LCS-06369** Batch ID: **R41923** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **6/21/06 8:13:35 PM** Prep Date
Client ID: Run ID: **ORGC8_060621A** SeqNo: **602028**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	466.8	50	500	0	93.4%	85	115	0			

Sample ID **LCSD-06369** Batch ID: **R41923** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **6/21/06 8:49:19 PM** Prep Date
Client ID: Run ID: **ORGC8_060621A** SeqNo: **602029**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	460.7	50	500	0	92.1%	85	115	467	1.32%	15	

Sample ID **LCS-15921** Batch ID: **15921** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **6/15/06 4:01:25 PM** Prep Date **6/15/06**
Client ID: Run ID: **ORGC7_060615B** SeqNo: **600448**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	456.3	50	500	0	91.3%	72	124	0			
TPHC Motor Oil	748.5	170	1,000	0	74.9%	71	139	0			

Sample ID **LCSD-15921** Batch ID: **15921** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **6/15/06 4:21:40 PM** Prep Date **6/15/06**
Client ID: Run ID: **ORGC7_060615B** SeqNo: **600449**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	490.3	50	500	0	98.1%	72	124	456	7.19%	15	
TPHC Motor Oil	760.5	170	1,000	0	76.1%	71	139	748	1.59%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Chain of Custody

LABORATORY NUMBER: 0606359

Attention: Colleen Ellis
Results & Invoice to: Winzler + Kelly
Address: 633 Third St
Eureka, CA 95501
Phone: 443-5326
Copies of Report to:
Sampler (Sign & Print): C. Acu

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 00142803.11500
Project Name: BLFP
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER (8021/5030)	PRESERVATIVE (Clean up)	ANALYSIS: TPH-G/BTEX	ANALYSIS: TPH-D/MO (3510 w/silica Gel)
	MW-15	6-9-06	10:30	GW	4	X	X	
	MW-14		11:11		4	X	X	
	MW-11		12:37		4	X	X	
	MW-16		1:45		4	X	X	
	MW-13		2:22		4	X	X	
	MW-12	↓	3:45	↓	4	X	X	
	QCTB							

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Do not analyze TB if any project sample is non-detect for all project analytes.

EDF results - Global ID # = T0602300143

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Eliacer Acu	6-12-06	Colleen Montgomery	6/12/06 1417

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*__MATRIX:__ DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Appendix D
Standard Operating Procedures

WINZLER & KELLY CONSULTING ENGINEERS

STANDARD OPERATING PROCEDURES
for
MONITORING WELL INSTALLATION AND DEVELOPMENT

SECTION I. MONITORING WELL INSTALLATION

1. Objective

To establish accepted procedures for the installation of monitoring wells for sites under investigation or remediation from impacts with chemical contaminants.

2. Background

Monitoring wells are used for subsurface investigation and remediation projects. Well-designed monitoring wells provide data on groundwater movement, groundwater quality, seasonal water table fluctuations, rates of natural attenuation, and changes in contaminant concentrations through time. Monitoring wells are installed in accordance with the California Well Standards (Department of Water Resources Bulletin 74-90) and with the appropriate lead agency guidelines.

3. Personnel Utilized and Responsibilities

Registered Professional: A Registered Professional (RP) is responsible for ensuring that the monitoring wells are properly installed, that the possibility of cross contamination between aquifers has been minimized, and that the well installation will achieve its desired purpose. The RP oversees the project and ensures that field personnel have been trained in the use of this procedure.

Project Scientist: The responsible professional in charge of fieldwork must determine the location and depth of each well, and decide on the sampling interval. The project scientist oversees installation of the well, collects samples and prepares them for transport to the laboratory, and records lithologic and other observations. The Project Scientist is responsible for site safety and health and compliance with this SOP and for submittal of the well completion report to the Department of Water Resources.

Staff Technician: A staff technician has 0.5 to 5 years experience logging borings, installing and developing monitoring wells. The staff technician is responsible for complying with these procedures, lithologic logging, collection of samples, and field documentation, and development of wells prior to sampling. The staff technician will call the RP with field observations and contaminant data to obtain approval of final well design.

Driller (Subcontractor): An appropriately licensed (C57) drilling contractor must employ an OSHA-certified crew. The Driller is responsible for the safety and conduct of their employees and complying with the project specifications described in the Workplan and

contract. All drilling and sampling methods will be consistent with ASTM Method D-1452-80, and local, state, and federal regulations. The Driller is responsible for installing monitoring wells according to pertinent agency standards.

4. Equipment Required

- Well Installation permit, Access Agreements, and other permits as needed
- Copy of approved Workplan with site Safety Plan included
- Minimum Level D personal protective equipment
- Downhole sampler with brass or stainless steel liners, Teflon sheeting, and end caps
- Photoionization detector (PID) / sealable plastic storage bags
- Boring Log form / Munsell color charts / USCS soil classification system chart
- Sample containers - provided by the laboratory OR
- EnCore® Sampling kit and soil cartridge containers
- Sample labels/Indelible marker/Chain of Custody forms
- Disposable gloves
- Ice chest with ice

5. Procedure

Winzler & Kelly will obtain all permits to perform drilling work unless contractually directed otherwise. Winzler & Kelly will prepare a site Safety and Health Plan detailing project hazards and controls, personnel decontamination, and emergency response procedures.

At least 48 hours before drilling, Winzler & Kelly personnel will contact Underground Services Alert (USA), or similar utility location service, to have subsurface utilities located and marked within the work area previously delineated with white paint. In order to ensure that the locations of subsurface utilities are known, Winzler & Kelly may perform a site inspection, contact individuals familiar with the work site, review as-built drawings, and may employ a private utility locator. When subsurface utilities are suspected, the first five feet of each boring will be advanced using a hand auger or posthole digger.

All monitoring wells are installed using a truck-mounted hollow-stem auger drill rig, unless site conditions require a different drilling method. All drilling equipment will be maintained and inspected daily. A drill rig kill switch mechanism will be operational and within reach of anyone working near the drill.

All down-hole drilling equipment will be cleaned and decontaminated prior to arriving at the site. Working components of the drill rig, drill stems, and augers are steam cleaned between monitoring well locations.

When ever possible, the first boring will be sampled to provide a continuous core to obtain a complete lithologic section of the boring. In subsequent borings, soil samples will be collected at approximately five-foot intervals to the total depth explored. Soil samples may also be collected from differing lithologies or areas of obvious contamination. Samples will be collected using a California-modified split spoon sampler driven 18 to 24 inches into native material beyond the auger bit. The split spoon will be driven using a 140-pound hammer dropped from 30 inches. The

number of blow counts required to drive the sampler each six-inch interval and the volume of soil recovered will be recorded on the well log. If copper or zinc contamination is being investigated, stainless steel liners will be used in lieu of brass.

Metal soil sample tubes selected for laboratory analysis will be covered on both ends with Teflon tape and sealed with plastic end caps. Samples will be labeled, recorded using Chain of Custody documentation, and placed into a chilled cooler for transport to the analytical laboratory. Soil in the remaining tubes will be retained for lithologic description and organic vapor analysis. Headspace organic vapor analysis will be accomplished by placing a hand sample of soil into a sealable plastic bag and allowing the sample to raise to ambient temperature. The probe of the PID will used to penetrate the bag to sample the headspace. The peak organic vapor reading is recorded on the well log.

Classify soil types and log observations using the Unified Soil Classification System (ASTM Visual Manual Procedure D 2488-84) and Munsell Soil Color Charts. Include observations on lithology, moisture, density, plasticity, and sample depths on the boring logs as appropriate.

An aquitard or aquiclude (clayey layer), three feet in thickness or greater, encountered beneath a saturated permeable layer, should be considered to be a possible confining layer to deeper aquifers. In order to prevent possible cross-contamination of a deeper aquifer, drilling will be stopped and the project manager or geologist consulted to determine how to proceed.

Soil drill cuttings are stockpiled on plastic and covered with additional plastic to control runoff or stored in 55-gallon DOT approved drums and left on site. Waste soil is sampled and analyzed to prepare a profile necessary for disposal and hauled by a licensed transporter to an appropriate licensed facility. All waste stored on site is labeled at the time of production.

6. Well Design and Construction

All well construction is performed in accordance with Department of Water Resources "California Well Standards" and all requirements of local oversight agencies. Borings for two inch monitoring wells will be a minimum of 8 inches in diameter and a minimum of 10 inches in diameter for four-inch wells. Monitoring wells are constructed of schedule 40 PVC casing unless site geochemistry or contaminant types dictate use of another material. The wells are constructed with factory-cut slots and threaded coupling between casing sections and caps.

The screened portion of the well is positioned so that it extends approximately ten feet into the water-bearing zone and approximately five feet above the maximum expected water elevation. The screened interval may extend less than five feet above the maximum water level to prevent intersection of well screen with the confining layer at the top of a confined aquifer, or where the water table is too shallow to allow for adequate construction of the well seal. Careful consideration should be given to the specific gravity of the contaminants of concern and screening the upper or lower portion of the aquifer.

A graded sand filter pack is placed in the annular space across the screened interval and extended at least one foot above the screen. This additional sand helps to prevent bentonite hole plug from entering the well screen if compaction of the filter pack occurs. The well screen slot size should be capable of retaining 90% of the filter pack material. Typically, 0.010-inch slots are used where

the aquifer material is predominantly clay and /or silt or poorly graded fine sand. A slot size of 0.020 inch is used when the water bearing formation is well-graded medium to coarse sand and/or gravel.

The silica sand filter pack grain size is selected according to aquifer material type as follows:

- For poorly graded fine sand or silt and clay – four times the 70% retained grain size of the formation;
- For medium to coarse sand, gavel or well-graded sediments – six times the 70% retained grain size.

Since results of particle size sieve analysis may not be available, filter pack selection may be performed on the basis of stratigraphy, using the finest grain size unit to be encountered in the screened interval as the defining particle size. Commonly selected grades of filter sand are 1/20 (or equivalent) for use with 0.010 inch slots and 2/12 or 2/16 (or equivalent) for use with 0.020 inch slotted screens.

The filter pack should be added slowly to fill the annular space between the well screen and the sides of the boring. The filter pack sand can be emplaced either through the hollow stem of the auger as the auger is removed or in the open hole surrounding the well casing if soil conditions permit. Uniform placement of the filter pack must be monitored during placement to ensure that bridging, or formation of an air gap, does not occur. The placement of the filter pack is monitored using a weighted tape measure to gauge the rate of filter sand placement and break any bridges. A bridged filter pack will eventually collapse and possibly result in failure of the bentonite well seal and impair the well surface seal.

A minimum one-foot seal of bentonite is placed above the sand filter pack. The bentonite seal is hydrated by either formation or potable water. Neat cement or a cement/bentonite mixture seals the remaining annular space to the surface. If bentonite is used in the grout mixture, it must not exceed 5% of the mixture, by weight. The grout may be placed using a tremie pipe, if the grout column will be longer than 20 feet or if water is present in the annular space above the bentonite seal.

A watertight locking cap and protective traffic-rated vault is installed on top of each well. The traffic-rated vault will be set in concrete and be raised slightly above the surrounding grade to ensure that rainwater or other drainage water does not pool over the wells.

Well construction details are presented on the soil boring log sheet for each well. Waterproof tags are attached to each well casing to provide data on well identification, installation date, and as-built construction details. Winzler & Kelly completes and submits or determines that adequate information has been provided to the Driller for him to complete and submit the required Well Completion Report to the Department of Water Resources.

The last page of this SOP illustrates a Typical Monitoring Well Construction Detail.

To make well data suitable for inclusion in the State of California GeoTracker GIS network, well location data must be surveyed horizontally to within than one meter accuracy using latitude/longitude coordinates and surveyed vertically to within 0.01 foot relative to mean sea level.

SECTION II. MONITORING WELL DEVELOPMENT

1. Objective

To establish accepted procedures for conducting well development prior to purging and sampling activities in accordance with standard practices by engineering professionals.

2. Background

Following the installation of a monitoring well, it is necessary to develop the well in order to adequately remove the silt and clay (fines) from the filter pack material and in the immediate proximity of the well, in order to minimize the infiltration of fines throughout the life of the monitoring well.

3. Personnel Required and Responsibilities

Project Manager: The Project Manager (PM) is responsible for ensuring that field personnel have been trained in the use of these procedures and for verifying that the development procedures are performed in compliance with this SOP. At a minimum, the PM will maintain contact with the client or contractor involved, will be available by phone during the field activities and will review field notes for completeness.

Field Geologist/Field Engineer/Soil Scientist/Technician: The field staff person assigned to the project is responsible for complying with this SOP. Responsibilities include preparation for field activities, ensuring equipment is in working order and clean prior to the field event, providing adequate field documentation of events, observations, readings, measurements, volume of water, and overall development activities.

4. Equipment Required

- Tool Box
- Disposable gloves
- Decontamination supplies
- Water Level Meter/tape and paste/other device
- Measuring tape
- Indelible marker/Drum labels
- Surge Block
- Development pump and hoses OR bailers and line
- Several 5-gallon buckets with 1 gallon increments noted
- 55-gallon drums or other water storage facility
- Well Development Forms

5. Procedure

After completion of monitoring well installation, and no sooner than 48 hours following emplacement of the well seals, the well shall be developed as described below. Prior to insertion in any well, all equipment will either be decontaminated or will be deemed clean, or previously unused, by the manufacturer.

- Open all monitoring wells at the site and allow to equilibrate approximately 15 minutes. Denote time and visual observations regarding well access, condition, security, etc. in logbook.

- Obtain initial depth to groundwater level readings from the point of survey mark, or from the North side of the top of the PVC casing, if not point of survey mark is present. Readings will be measured to the nearest 0.01 foot. Denote time and readings in logbook and on forms provided.
- Obtain depth to casing bottom for each well. Readings will be measured to the nearest 0.01 foot. Denote readings in logbook, and compare with boring log information.
- Calculate the volume of standing water in each monitoring well. Denote the volume calculated for each well in logbook and/or on forms provided.
- Alternate surging/swabbing of the screened interval and purging of the water:
  - Surging/Swabbing: Using either a surge block, the purge pump, or a heavy bailer, swab the screened portion of the well by lowering the surge equipment to the bottom of the well, rapidly raising and lowering the equipment in 2-foot intervals in a plunger-like fashion. This should force water in and out of the screened interval. Repeat the surge/swab at least 10 times at each 2-foot interval. Then swab the next two-foot screened interval. Follow each round of surging by purging.
  - Purging: Following each round of surging of the screened interval, the well shall be purged of water. Be sure to lower the bailer to the bottom of the well in order to "grab" the silts and clays which have settled to the bottom of the well. If a well has a large portion of fines, then the purging may be performed only using a bailer, since silts and clays can cause malfunction in the pumps.
- **Please note, to develop the entire screened interval, water must be present over the entire length of screen. In wells with little water or with very poor recharge, distilled water may be added to the well to ensure adequate development of the well. If water is added, the volume of water added must be documented, and the water being used should be sampled for the presence of contaminants.**
- Continue the process until the entire screened interval has been adequately swabbed and purge water is relatively clear of fine material.
- Contain all purge water in the drums or other containers provided. Denote the date, time and origin of the water on the containers. Include calculation of the volume of water removed from each well and observations of the presence of sediments and color/odor of water, etc., in the logbook and on the forms provided.
- Obtain final depth to groundwater level readings from the point of survey mark, or from the North side of the top of the PVC casing, if not point of survey mark is present. Readings will be measured to the nearest 0.01 foot. Denote time and readings in logbook and on forms provided.
- Conduct final decontamination procedures of any field equipment that is not disposable.
- Close and secure each well upon completion of field activities. Ensure that all water storage containers are closed and secured and that the site is clean.

WINZLER & KELLY CONSULTING ENGINEERS

STANDARD OPERATING PROCEDURES
for
MONITORING WELL PURGING AND SAMPLING ACTIVITIES

1.0 OBJECTIVE

To establish accepted procedures for the purging and sampling groundwater from monitoring wells, to ensure that representative samples of formation water are collected by accepted methods.

1.1 Background

To obtain a representative groundwater sample from monitor wells, it is necessary to remove (purge) stagnant water from within and near the well prior to sampling. In general, three to seven casing volumes must be removed from the well prior to sampling, to provide a representative sample. Wells may be sampled after purging less than the minimum three volumes if well recharge rates are beyond reasonable time constraints. The specific method of well purging will be decided on a case by case basis, or as required by project specifications.

1.2 Personnel Required and Responsibilities

Project Manager: The Project Manager (PM) is responsible for ensuring that field personnel have been trained in the use of these procedures and for verifying that monitoring well purging and sampling activities are performed in compliance with these SOP's.

Field Technician: The Field Technician is responsible for complying with these SOP's, including the purging and sampling of monitor wells, the safe containerization of extracted waters, the documentation of field procedures, and the handling of samples..

2.0 WELL PURGING ACTIVITIES

2.1 Equipment Required

- Bottom-filling bailer, suction air pump, air-lift pump, gas operated (bladder) pump, submersible pump, or other pumping device
- pH meter
- Conductivity/Temperature Meter
- Water Level Indicator
- Well Sampling Data Sheet
- Indelible marker
- Disposable gloves
- Containers to hold extracted water (as required)

2.2. Purging Procedure

Prior to groundwater sampling, each monitoring well will be purged as described below. Prior to insertion into each well, all equipment will be either decontaminated (following W&K Decontamination procedures) or will be deemed clean or previously unused by the manufacturer.

- Open all monitoring wells to be purged and allow to equilibrate 5 to 15 minutes. Record time and visual observations regarding well access, condition, security, etc. in log book.
- Obtain depth to groundwater level readings according to Winzler & Kelly Standard Operating Procedures for Groundwater Level measurements and Free Phase Hydrocarbon Measurements. Record time and readings on the Well Level Measurement Data Sheet.
- Calculate the volume of standing water in each monitoring well. Record the volume calculated for each well on the Well Sampling Data Sheet.
- Begin purging the well by removing water from the well and collecting in a calibrated container (i.e., 5-gallon bucket marked in 1-gallon increments). The depth, or interval, from which the water is being purged should be noted on the data sheet.
- Obtain readings of field parameters (pH, conductivity, temperature, and turbidity) and make visual observations of color/odor/turbidity at selected intervals (i.e., every gallon, every five gallons, etc.) throughout the purging process. Depending on the calculated volume and the expected number of gallons to be purged, a minimum of five readings should be collected. Record the time, readings, and visual comments on the Purge Data Sheet.
- Continue purging until at least three (minimum) to four well volumes have been removed and the field parameters stabilize to within:

pH	≈0.1
conductivity	≈10%
turbidity	≈10%
temperature	≈1°

  Do not exceed seven well volumes.
- Obtain a final depth to groundwater level measurement prior to collection of the groundwater sample and note the reading and time on the Well Level Measurement Data Sheet. Be sure that the measurement probe has been thoroughly decontaminated prior to insertion into each well. Note any qualitative comments regarding recharge rate of each well, and calculate the percent of the original water column that has recovered at the time of the final depth measurement. It is ideal to attain a minimum of 80% water level recovery prior to sampling, if time constraints allow. Very slow recharge rates may not allow purging the minimum three volumes or 80% recovery; lesser volumes may be used for sampling, as needed and documented.
- Collect a groundwater sample following the directions below under Section 3.0.

- Containerize all purge water and decontamination water in 55-gallon drums. Use yellow indelible markers (storeroom supply) to label all drums on the side with date, contents, origin and other pertinent information. Avoid marking the tops of drums with black marker, such marks are temporary and will soon fade/rust. Note the number, condition and location of drums on site in the field notes.

3.0 WELL SAMPLING ACTIVITIES

3.1 Equipment Required

- Disposable bailer (previously unused) *
- Bottom emptying device (sampling port)
- Monofilament nylon line (min 40-lb test)
- Monitor Well Purge & Sample Data Sheets
- Sample containers (preserved, as required) - provided by the laboratory
- Sample labels
- Indelible marker
- Disposal gloves
- Decontamination soap (Alconox)
- Distilled water for equipment decontamination.

*A variety of sampling techniques are available for the collection of groundwater samples. Except where otherwise required, W&K only utilizes disposable polyethylene bailers to collect groundwater samples.

3.2. Sampling Procedure

Prior to collecting a groundwater sample from a monitoring well, each well must be properly purged in accordance with W&K's SOP for Monitoring Well Purging Activities (See Section 2.0 above), including the measurement of the final water level and documentation of recharge.

- Water from the desired screen interval will be collected by lowering the previously unused disposable, polyethylene, bottom-filling bailer into the well.
- When bailer is completely full, carefully retract the bailer from the well casing.
- Using a previously unused, new, bottom-emptying device, to minimize agitation of the water, transfer the water from the bailer to the sample containers.
- When sampling for volatile constituents (VOA's), the water samples will be collected in 40-ml glass vials (preserved as required by the analyses requested). Precautions will be taken to prevent capturing air bubbles in the vials.
- Upon filling, each vial will be immediately capped with a Teflon septum and plastic screw cap. The vial will be checked for air bubbles by inverting and gently tapping the vial. If any bubbles are visible, the vial will be refilled and confirmed to be free of any air bubbles.

- At a minimum, all samples will be labeled with the following information:

Sample ID	Date and Time Sample Collected
Location	Sampler's Initials
Project Number	Analyses Requested

- Sample information will be documented on the Chain-of-Custody form.
  All samples will be placed in an ice chest, chilled to a temperature of 4°C. The ice chest will remain in the custody of the sampler until it is transferred to the courier service for delivery at the analytical laboratory for analyses. Any and all transfer of sample custody must be documented on the Chain-of-Custody form with the name, signature, affiliation, date and time of the persons releasing and receiving custody of the samples.
- Upon completion of the sampling activities, each well shall be closed and secured by replacing the well cap and securing the lock.
- Dispose of gloves, bailers, bottom-emptying devices, and bailing line after each use.

WINZLER & KELLY CONSULTING ENGINEERS

STANDARD OPERATING PROCEDURES
GROUNDWATER LEVEL MEASUREMENTS AND
FREE PHASE HYDROCARBON MEASUREMENTS

1. Objective

To establish accepted procedures for detecting free-phase hydrocarbons and measuring groundwater levels in monitoring wells.

2. Background

Any time water levels are required to determine the groundwater flow gradient or flow direction, water levels are collected. Wells are tested for free-phase hydrocarbons prior to insertion of electronic water level probes or purge pumps the first time a well is sampled and in any well that has a history of free-phase hydrocarbons.

3. Personnel Required and Responsibilities

Project Manager: The Project Manager (PM) is responsible for ensuring that field personnel have been trained in these procedures and for verifying that water levels have been collected in compliance with this SOP.

Field Technician: The Field Technician is responsible for complying with this SOP, including determining if there are free phase hydrocarbons in the well, the thickness (if it exists) and the stabilized water level in the well.

4. Equipment Required

- Water level/free phase hydrocarbon indicator probe or pastes
- Tape measure
- Water Level Data Form/pencil
- Watch
- Disposable gloves
- Distilled water
- Alconox soap
- Containers to hold rinsate water
- Site Safety Plan and Hospital Map
- Keys to wells
- Tools to open wells

5. Procedure

After reviewing the Site Safety Plan and determining the type and concentrations of contaminants that may be present on site, the field personnel will don the proper level of personal protection prior to opening any wells.

Open all monitoring wells to be measured and remove expandable caps. Allow wells to equilibrate 5 to 15 minutes. Record time and visual observations regarding well access, condition, security, etc on water level data sheet.

5a. Alternative procedure for electronic water-level/free-phase hydrocarbon indicator

- Decontaminate probe with potable water and Alconox mix. Rinse with distilled water.
- Lower probe into the well and determine the presence of any free-phase hydrocarbons. The probe will emit a continuous sound if free product is present. If no product is present, the probe will make an oscillating (beeping) sound when it encounters water. Record the depth of free-phase hydrocarbons on the water level data sheet. If no free-phase hydrocarbons are present, record the water depth. DO NOT SUBMERGE THE PROBE THROUGH THE FLOATING PRODUCT LAYER.
- Gradient calculations shall then be performed by calculation of the groundwater elevation by:
- GW ELEV = (TOC) - (depth to water).
- TOC indicates top of casing elevation as surveyed.
- If free-phase hydrocarbons are indicated, determine the depth to water using a steel measuring tape and water indicator paste, by the procedure below.

5b. Alternative procedure for product and water indicator pastes

- Decontaminate tape measure.
- Place **product** indicator paste on bottom two feet of tape measure.
- Lower tape measure into well. Note depth to which the end of the tape is lowered relative to the point of survey mark on the top of the well casing.
- Withdraw the tape. If paste has changed color, free-phase hydrocarbons are present. Calculate depth to the floating layer by:
  - Depth to Product = (depth to which tape lowered into well) - (length of product indicator paste discoloration).
- Remove product indicator paste with paper towel and decontaminate tape measure.
- Apply **water** indicator paste on bottom two feet of tape measure.
- Lower tape into well. Note depth to which end of tape is lowered.
- Withdraw the tape. Calculate the depth to water by:
  - Depth to Water = (depth to which tape lowered into well) - (length of water indicator paste discoloration).
- Obtain the depth to groundwater level readings from the point of survey mark, or from the North side of the top of the casing, if no point of survey mark is present. Readings will be measured to the nearest 0.01 foot. Note time and readings on water level data sheet.
- Use the same measuring device to measure water levels in all wells to be used in the gradient calculation.

- Obtain depth to casing bottom for each well by submerging a tape measure until it reaches the bottom of the well. Readings will be measured to the nearest 0.01 foot. Note readings on data sheet. If sampling is not going to be completed at the site, close and lock all wells.
- Gradient calculations shall then be conducted by making water depth corrections for the presence of free product. First calculate the product thickness:
  - Product Thickness = (Depth to Water) - (Depth to Product).
  - Water elevations when free product is present shall then be calculated by:
  - GW ELEV = (TOC) - (Depth to Water) - $SG_{product}$ (Product Thickness)
  - On any site where monitoring will occur more than once, a free product sample will be collected and measured for specific gravity ($SG_{product}$). In the absence of the site specific free product specific gravity $SG_{product}$ shall be assumed to be 0.78.

Appendix E
Field Notes and Waste Manifest

WINZLER & KELLY
CONSULTING ENGINEERS

MEMORANDUM 246742

TO: Carlos Acu

FROM: Colleen Ellis

DATE: May 29, 2006

RE: **Sampling at Blue Lake Forest Products**

JOB #: 00-142803-11500

Carlos,
Here are the instructions for the sampling event for June 2006 at Blue Lake Forest Products.

- Open wells MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16. NOTE: Sample in the following order, from cleanest to dirtiest: Monitoring well MW-15, MW-14, and MW-11, then MW-16, MW-13, and finally MW-12.

- Measure and record depth to water and dissolved oxygen in all wells.

- Purge all wells in accordance with our SOPs.

- Please inventory drums stored on-site and determine level in each purge water drum.

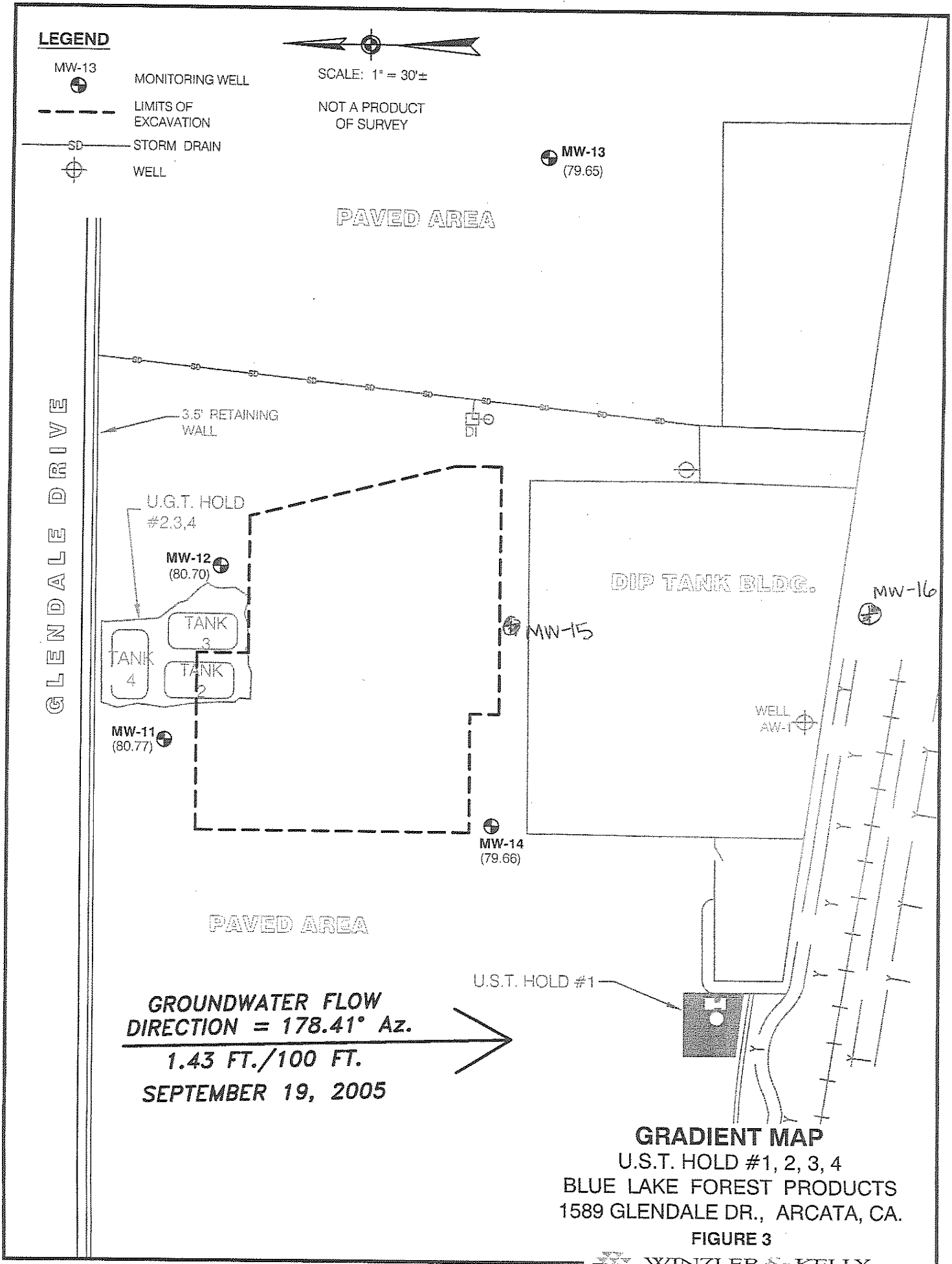
- Collect water samples from all wells as follows:

  1. Fill 3, 40-ml vials preserved with HCl and 2, 1L amber glass with water from each well.
  2. Bring either a trip blank or fill 1, 40-ml vial preserved with HCl with distilled water and label it as a field blank.
  3. Forward all VOA vials to North Coast Laboratories for standard turnaround time to be analyzed for:
     - TPH-G and BTEX by EPA Method 8021/5030
     - TPH-D and TPH-MO by EPA Method 3510 w/ silica gel cleanup.

- Request Geotracker Data format from the Lab. Global ID = T0602300143
- Instruct lab "do not analyze Trip Blank if any project sample is non-detect for all project analytes".

I have attached a site map for your reference. Please see me if you have any questions.

633 Third Street, Eureka California 95501-0417
tel 707.443.8326 fax 707.444.8330
eka@w-and-k.com
www.w-and-k.com



GRADIENT MAP
U.S.T. HOLD #1, 2, 3, 4
BLUE LAKE FOREST PRODUCTS
1589 GLENDALE DR., ARCATA, CA.
FIGURE 3

WINZLER & KELLY

FILE: J:\CAD\JOBS\2000\00142803\dwg\428c206f03a.dwg DATE: Oct 07 05 @ 8:51am

WINZLER & KELLY
CONSULTING ENGINEERS
633 Third Street, Eureka, CA 95501-0417
(707) 443-8326 / FAX (707) 444-8330

By CA Date 6-8-06 Client BLFP Sheet No. _____ of _____

Subject Monitoring Job No. 001428B3.11500

- Arrived on site
- Opened up all the wells
- Waited for the wells to equilibrate
- Decon water meter and purge pump upon arrival
- Checked calibration of D.O and PH meters
- collected water levels in order of cleaness to dirties
- Segregated the clean water from the dirty water
- began purging from cleaness to dirties
- Stored purged water in the drum
- labeled drums
- Will purge as many wells as I can today and sample tomorrow
- Secured the wells
- secured the drums

6-9-06

- Arrived on site
- Finished purging
- Waited for wells to recharge to 80% before Sampling
- Stored the samples in a cooler with blue ice
-

MW-15	10:30
MW-14	11:11
MW-11	12:37
MW-16	1:45
MW-13	2:22
MW-12	3:45

- Secured the wells
- Secured the drums

PROJECT NAME: BLFP

PROJECT NUMBER: 00142803.11500

TODAY'S DATE: 6-8-06

FIELD PERSONNEL:

WELL NUMBER	OPEN WELL	INITIAL WATER LEVEL		FINAL WATER LEVEL		COMMENTS
	Time	Time	Depth to Water (ft. bgs)	Time D.O	Depth to Water (ft. bgs)	
MW-15	9:15	10:10	9.51	0.2mg/L	13.8°C	20'
MW-14	9:20	10:15	9.67	0.2mg/L	14.4°C	25'
MW-11	9:26	10:21	8.71	4.2mg/L	15.1°C	25'
MW-16	9:31	10:26	6.90	1.0mg/L	14.0°C	19.91
MW-13	9:37	10:33	9.31	4.3mg/L	14.6°C	22.37
MW-12	9:44	10:40	8.77	2.2mg/L	14.5°C	24.57

Weather Conditions Today: Overcast

FORMS\H20LVL

WINZLER & KELLY
Consulting Engineering

SUBJECT NAME: BLFP
PROJECT NUMBER: 001428B3.11500
WELL DESIGNATION: MW-11

PROJECT DATE: 6-8-06
SAMPLER:
SAMPLE NUMBER MW1-11

CONDITION OF WELL HEAD/VAULT/CAP & LOCK
A. TOP OF CASING ELEVATION
B. DEPTH TO GROUNDWATER (initial) 8.71
C. DEPTH OF WELL MEASURED 25
D. HEIGHT OF WATER COLUMN (C-B) 25 - 8.71 = 16.29
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓ 3"_____ 4"_____ OTHER_____

CALCULATED WELL VOLUME: DxV= 16.29 X .163 = 2.66 gal
A. Volume (V) of 2" wall = 0.163 gal/ft
B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TUPE: POLY BAILER_____ STAINLESS BAILER_____
ELECTRIC_____ OTHER_____

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
2:05	2	0.75	6.12	14.8	59.5 µS/cm	murky
2:20	4	1.50	6.05	14.8	59.4 µS/cm	
2:35	6	2.26	6.07	14.8	59.3 µS/cm	
2:45	7	2.63	6.05	14.7	58.6 µS/cm	
2:57	7.25	2.72	6.02	14.7	58.3 µS/cm	
3:07	7.50	2.82	5.95	14.8	59.4 µS/cm	
3:19	7.75	2.91	5.95	14.9	60.3 µS/cm	
3:30	8.0	3.01	5.95	14.8	60.0 µS/cm	

RECHARGE RATE (qualitative):_____
SAMPLER TYPE: TEFLON BAILER___ ACRYLIC BAILER_____ DISPOSABLE BAILER ____

SAMPLES COLLECTER: PRESERVED VOA'S_____ UNPRESERVED VOA'S_____
PRESERVED LITERS_____ UNPRESERSERVED LITERS_____
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED_____ UNFILTERED_____ OTHER_____

COMMENTS_____

WINZLER & KELLY
Consulting Engineering

SUBJECT NAME: BLEP
PROJECT NUMBER: 001428.03.11500
WELL DESIGNATION: MW-12

PROJECT DATE: 6-9-06
SAMPLER:
SAMPLE NUMBER MW-12

CONDITION OF WELL HEAD/VAULT/CAP & LOCK

A. TOP OF CASING ELEVATION
B. DEPTH TO GROUNDWATER (initial) 8.77
C. DEPTH OF WELL MEASURED 24.57
D. HEIGHT OF WATER COLUMN (C-B) 24.57 - 8.77 = 15.8
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓ 3"_____ 4"_____ OTHER_____

CALCULATED WELL VOLUME: DxV= 15.8 X .163 = 2.58 gal

A. Volume (V) of 2" wall = 0.163 gal/ft
B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TUPE: POLY BAILER_____ STAINLESS BAILER_____
ELECTRIC_____ OTHER_____

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (^{0}F OR ^{0}C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
12:12	2	0.78	5.73	16.6	81.4 us/cm	mark
12:27	4	1.55	5.81	16.5	68.7 us/cm	
12:42	6	2.33	5.84	16.4	275 us/cm	
12:52	7	2.71	5.85	16.6	259 us/cm	
1:05	7.25	2.81	5.86	16.9	273 us/cm	
1:15	7.50	2.91	5.85	16.8	284 us/cm	
1:27	7.75	3.0	5.85	17.0	282 us/cm	

RECHARGE RATE (qualitative):_____
SAMPLER TYPE: TEFLON BAILER____ ACRYLIC BAILER_____ DISPOSABLE BAILER____

SAMPLES COLLECTER:
PRESERVED VOA'S_____ UNPRESERVED VOA'S_____
PRESERVED LITERS_____ UNPRESERSERVED LITERS_____
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED_____ UNFILTERED_____ OTHER_____

COMMENTS_____

WINZLER & KELLY
Consulting Engineering

SUBJECT NAME: BLFP
PROJECT NUMBER: 001428B3.1500
WELL DESIGNATION: MW-13

PROJECT DATE: 6-9-06
SAMPLER:
SAMPLE NUMBER MW-13

CONDITION OF WELL HEAD/VAULT/CAP & LOCK
A. TOP OF CASING ELEVATION
B. DEPTH TO GROUNDWATER (initial) 9.31
C. DEPTH OF WELL MEASURED 22.37
D. HEIGHT OF WATER COLUMN (C-B) 22.37 - 9.31 = 13.06
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓ 3"_____ 4"_____ OTHER_____

CALCULATED WELL VOLUME: DxV= 13.06 X .163 = 2.13 gal
A. Volume (V) of 2" wall = 0.163 gal/ft
B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TUPE: POLY BAILER_____ STAINLESS BAILER_____
ELECTRIC_____ OTHER_____

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmbos/cm)	TURBIDITY (NTU or visual)
10:10	2	0.94	5.81	15.7	249 us/cm	murky
10:27	4	1.84	5.82	15.8	179.0 us/cm	
10:39	5	2.35	5.80	15.8	281.0 us/cm	
10:51	5.5	2.58	5.77	15.9	269.0 us/cm	
11:01	6	2.82	5.75	16.0	244 us/cm	
11:11	6.25	2.93	5.74	16.2	241 us/cm	
11:25	6.50	3.05	5.72	16.2	238 us/cm	

RECHARGE RATE (qualitative):_____
SAMPLER TYPE: TEFLON BAILER____ ACRYLIC BAILER____ DISPOSABLE BAILER____

SAMPLES COLLECTER: PRESERVED VOA'S____ UNPRESERVED VOA'S_____
PRESERVED LITERS_____ UNPRESERSERVED LITERS_____
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED_____ UNFILTERED_____ OTHER_____

COMMENTS_____

WINZLER & KELLY
Consulting Engineering

SUBJECT NAME: BLEP
PROJECT NUMBER: 00142803.11500
WELL DESIGNATION: MW-14

PROJECT DATE: 6-8-06
SAMPLER: _____
SAMPLE NUMBER MW-14

CONDITION OF WELL HEAD/VAULT/CAP & LOCK
A. TOP OF CASING ELEVATION
B. DEPTH TO GROUNDWATER (initial) 9.67
C. DEPTH OF WELL MEASURED 25
D. HEIGHT OF WATER COLUMN (C-B) 25-9.67 = 15.33
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓ 3" _____ 4" _____ OTHER _____

CALCULATED WELL VOLUME: DxV= 15.33 x .163 = 2.50 gal
A. Volume (V) of 2" wall = 0.163 gal/ft
B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR NO SHEEN NO FLOATING PRODUCT THICKNESS NO

PUMP TUPE: POLY BAILER _____ STAINLESS BAILER _____
ELECTRIC _____ OTHER _____

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
12:20	2	0.80	6.47	15.1	106.9 uS/cm	cloudy
12:35	4	1.60	6.46	15.0	199.9 uS/cm	
12:50	6	2.40	6.46	15.1	200 uS/cm	
12:59	6.50	2.60	6.47	14.9	197.3 uS/cm	
1:10	6.75	2.70	6.44	14.9	192.5 uS/cm	
1:22	7.0	2.80	6.43	14.8	191.3 uS/cm	
1:32	7.25	2.90	6.41	14.8	105.4 uS/cm	
1:45	7.50	3.00	6.41	14.8	191.2 uS/cm	

RECHARGE RATE (qualitative): _____
SAMPLER TYPE: TEFLON BAILER ____ ACRYLIC BAILER ____ DISPOSABLE BAILER ____

SAMPLES COLLECTER: PRESERVED VOA'S ____ UNPRESERVED VOA'S ____
PRESERVED LITERS ____ UNPRESERSERVED LITERS ____
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED ____ UNFILTERED ____ OTHER ____

COMMENTS _____

WINZLER & KELLY
Consulting Engineering

SUBJECT NAME: BLFP
PROJECT NUMBER:
WELL DESIGNATION: MW-15

PROJECT DATE: 6-8-06
SAMPLER:
SAMPLE NUMBER

CONDITION OF WELL HEAD/VAULT/CAP & LOCK
A. TOP OF CASING ELEVATION
B. DEPTH TO GROUNDWATER (initial) 9.51
C. DEPTH OF WELL MEASURED 20
D. HEIGHT OF WATER COLUMN (C-B) 20 - 9.51 = 10.49
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓ 3"_____ 4"_____ OTHER_____

CALCULATED WELL VOLUME: DxV= 10.49 X .163 = 1.71 gal
A. Volume (V) of 2" wall = 0.163 gal/ft
B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR 7 SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TUPE: POLY BAILER_____ STAINLESS BAILER_____
ELECTRIC_____ OTHER_____

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
11:05	2	1.17	7.03	14.3	7.54 us/cm	murky
11:19	4	2.34	6.87	15.0	102.5 us/cm	
11:30	4.5	2.63	6.75	14.7	775 us/cm	
11:40	4.75	2.78	6.71	14.7	702 us/cm	
11:51	5	2.92	6.60	14.6	754 us/cm	
12:02	5.25	3.07	6.67	14.7	753 us/cm	

RECHARGE RATE (qualitative):_____
SAMPLER TYPE: TEFLON BAILER____ ACRYLIC BAILER_____ DISPOSABLE BAILER ____

SAMPLES COLLECTER: PRESERVED VOA'S_____ UNPRESERVED VOA'S_____
PRESERVED LITERS_____ UNPRESERSERVED LITERS_____
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED_____ UNFILTERED_____ OTHER_____

COMMENTS_____

WINZLER & KELLY
Consulting Engineering

SUBJECT NAME: BLFP
PROJECT NUMBER:
WELL DESIGNATION: MW-16

PROJECT DATE:
SAMPLER:
SAMPLE NUMBER

CONDITION OF WELL HEAD/VAULT/CAP & LOCK
A. TOP OF CASING ELEVATION
B. DEPTH TO GROUNDWATER (initial) 6.90
C. DEPTH OF WELL MEASURED 19.91
D. HEIGHT OF WATER COLUMN (C-B) 19.91 - 6.90 = 13.01
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓ 3"_____ 4"_____ OTHER_____

CALCULATED WELL VOLUME: DxV= 13.01 X .163 = 2.12 gal
A. Volume (V) of 2" wall = 0.163 gal/ft
B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TUPE: POLY BAILER_____ STAINLESS BAILER_____
ELECTRIC_____ OTHER_____

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
3:45	2	0.94	5.90	14.3	279 us/cm	murky
3:59	4	1.89	5.93	14.5	371 us/cm	
4:10	5	2.36	5.94	14.3	154.4 us/cm	
4:21	5.75	2.71	5.94	14.4	377 us/cm	
4:31	6	2.83	5.92	14.6	229 us/cm	
4:45	6.25	2.95	5.96	14.5	183.1 us/cm	
4:57	6.50	3.07	5.96	14.6	179.9 us/cm	

RECHARGE RATE (qualitative):_____
SAMPLER TYPE: TEFLON BAILER____ ACRYLIC BAILER_____ DISPOSABLE BAILER____

SAMPLES COLLECTER:
PRESERVED VOA'S_____ UNPRESERVED VOA'S_____
PRESERVED LITERS_____ UNPRESERSERVED LITERS_____
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:
FILTERED_____ UNFILTERED_____ OTHER_____

COMMENTS_____

E.P.A. # CAD 980694103

CHP # 225559

HAULER # 0812

E.P.A. CAL 930256136

%Lube ____ %Ind ____

CHICO DRAIN OIL SERVICE, L.L.C.

TAG # 135232

Since 1972

530-345-9043

1618 W. 5th St.
Chico, CA 95928

1-800-733-9043

Date: 6/23/2006

Contact: Leonard

Generator/Job Location

Name Blue Lake Forest Products	
Address 1569 Glendale Dr.	
City Arcata State Zip 95521-	
Phone (707) 822-9403 Zone	
EPA ID CAL000188920 Billing Method	

Billing Information

Name Winzler & Kelly	
Address	
City State Zip	
Phone (707) 443-8326	
P.O.	Customer Code 33807

Product	Waste Code	Manifest Number	Quantity	Units	Price	Amount
Used Oil/Mixed Oil Non-RCRA Hazardous Waste Liquid	221			GAL.		
Used Antifreeze - Non-RCRA Hazardous Waste Liquid	343			GAL.		
Oil Water Mixed - Non-RCRA Hazardous Waste Liquid	221			GAL.		
Non-Hazardous Water	N/A	NON-HAZ	360	GAL.	.01	3.60
Oily Sludge - Non-RCRA Hazardous Waste Liquid	222			GAL.		
Drained Used Oil Filters	N/A			DRUM		
Non-RCRA Hazardous Waste (Solid-Liquid)						
Parts Washer Service	N/A			N/A		
Haz-Waste Drums (Empty)	N/A			DRUM		
Drum Delivery	N/A			DRUM		
Disposal Drums	N/A			DRUMS		
Transportation/Stand-by	N/A			HRS.		
Other:						
U.S. D.O.T. Description				DRUM		

Clor-D-Tect: Pass	Fail	PPM	Per Test		Total: 3.60
Comments: purged water		Total:			

TSDF Chico Drain Oil Service, LLC 1618 W. 5th St. Chico CA 95928	Driver Signature	Customer Signature - Read and Approved
	Truck # 118	Print Name Daniel Parks
Manifest Number: NON-HAZ	Date 06/21/06	Date 06/21/06

GENERATOR CERTIFIES THAT IT HAS A PROGRAM IN PLACE TO REDUCE THE VOLUME AND TOXICITY OF WASTE GENERATED TO THE DEGREE IT HAS DETERMINED TO BE ECONOMICALLY PRACTICABLE. WHEN USING THE CONSOLIDATED MANIFESTING PROCEDURE, CHICO DRAIN OIL SERVICES AGREES WITH THE GENERATOR LISTED ABOVE TO HAVE THE GENERATOR'S HAZARDOUS WASTE TRANSPORTED TO AN AUTHORIZED HAZARDOUS WASTE TREATMENT FACILITY FOR APPROPRIATE TREATMENT. _____ INITIAL

Certificate of Recycling

CHICO DRAIN OIL SERVICE OFFERS PICKUP, TRANSPORTATION, AND RECYCLING OF YOUR WASTE STREAMS. CHICO DRAIN OIL SERVICE ASSURES THAT THE USED OIL, USED ANTIFREEZE, OILY WATER, DRUMMED WASTE AND USED OIL FILTERS WILL MEET OR EXCEED ALL EPA AND STATE OF CALIFORNIA REQUIREMENTS. CHICO DRAIN OIL SERVICE ALSO OFFERS VACUUM CLEANING OF CLARIFIERS, PARTS WASHERS, AND SUMPS. YOUR HAZARDOUS WASTE NEEDS OF DRUM WASTE FROM RCRA TO OILY LIQUIDS AND SOLIDS CAN BE MANAGED. CHICO DRAIN OIL SERVICE OFFERS A COMPLETE LINE OF ENVIRONMENTALLY SAFE PARTS WASHERS TO REPLACE OUTDATED SOLVENT MACHINES.

IMPORTANT NOTICE REGARDING THE DISPOSITION OF YOUR USED OIL
PLEASE SIGN AFTER READING

_____ (used oil transporter) hereby advises _____ (used oil generator) that _____ (generator's) shipment of used oil may be transported to a facility that is required to comply with federal regulations applicable to management of used oil, but that is not required to comply with the more stringent requirements applicable to hazardous waste management facilities. California facilities that handle or process used oil are required to meet those more stringent requirements, and some out-of-state facilities that process used oil also meet those requirements. These include more stringent leak detection and prevention requirements, engineering certifications of tank integrity, and financial assurances for closure and accidental releases. It is lawful to send used oil to out-of-state facilities that comply only with federal used oil management standards and not these more stringent requirements.

This notification is for information purposes only.

_____ (signed, Transporter) Date: _____

_____ (signed, Generator) Date: _____

PAPER COLOR KEY: WHITE-OFFICE YELLOW-TSD GOLDEN-CUSTOMER PINK-MANIFEST